



Attorney Docket No. 2057/144

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of :  
Leonard M. Greene : Group Art Unit: 3644  
Serial No.: 10/659,334 : Examiner: Tien Quang Dinh:  
Filed: September 11, 2003 :  
For: HELICOPTER TURBINE ENGINE PROTECTION SYSTEM

**APPLICANT'S REPLY BRIEF**

Sir:

This Reply Brief is in response to the "Examiner's Answer" of January 27, 2006.

**ARGUMENT**

It is respectfully submitted that the Examiner failed to respond to Applicant's argument with respect to Grondin et al., Jensen, Mathews et al. and Latin.

Applicant's claim 11 and dependent claims 12 and 13 each call for:

Means for injecting water and/or alcohol into the helicopter engine during a start up procedure while maintaining said airborne tank full of water and/or alcohol.

In Applicant's Brief at page 10 Applicant stated:

Finally, it is respectfully submitted that Grondin et al., Jensen, or Matthews et al. do not show the use of a ground source of water/alcohol for an aircraft. What they do disclose is a filter pump system with a screen, a system for periodic fluid maintenance of apparatus and a coolant recycling system. Accordingly, it is Applicant's contention that these references have no bearing on the use in a helicopter and that such references do not disclose or suggest Applicant's unique combination of elements.

Clearly, there is no suggestion in any of the references to suggest the concept wherein a cooling liquid is available to avoid a hot start and, if used, does not reduce the amount of fluid in the airborne tank. This allows the pilot to use fluid before taking off and then to take-off with an adequate supply of cooling liquid for subsequent overstressed conditions. It also allows the aircraft to carry less weight during flight.

In the Examiner's Answer the Examiner stated:

As for the arguments on Grondin et al., Jensen, Matthews et al. and Latin, these references were used to disclose various parts to allow coolant to be pumped into an aircraft to prevent engine malfunction.

It is respectfully submitted that the above statement fails to address the fact that Applicant's claims call for injecting water and/or alcohol into the helicopter engine during a start-up procedure while maintaining said airborne tank full of water and/or alcohol. The fact is that the cited references do not even remotely suggest this concept.

Further, the above concept allows a helicopter to reduce the weight of water or alcohol on board. Accordingly, it is Applicant's contention that claims 11-13 should be allowed.

With respect to the Examiner's reference to Grondin et al., Jensen, Matthews et al. and Latin, the Examiner alleges that the references were used to disclose various parts to allow coolant to be pumped into an aircraft to prevent engine malfunction. This is not correct. Latin refers to a novel fountain device for a swimming pool which features an adjustable jet pump. Grondin et al. refers to filtering a filter pump system for filtering liquids such as slurries, oils, coolants, paints etc. Matthews et al. refers to a system for periodic fluid maintenance of apparatus that is a system for periodically maintaining non-fuel fluids required for proper performances in various apparatus and for reporting non-fuel fluid maintenance action taken. Jensen refers to a coolant recycling system. Clearly, none of these references disclose or suggest Applicant's novel combination of elements.

Further, it is Applicant's contention that claims 11-13 call for a unique combination of elements that are not disclosed or suggested by the cited art. To be more specific, claims 11-13 call for:

Comparison means for producing a signal when the actual engine temperature falls outside of the safe engine temperature profile during start up of the engine;

Means for injecting water and/or alcohol into the helicopter engine during a start up procedure while maintaining said airborne tank full of water and/or alcohol;

A quick disconnect coupling for disconnecting the supply of water and/or alcohol from the ground base source after completion of the start up procedure; and

Means for injecting water and/or alcohol from said airborne tank into the turbine engine in response to an over-stress during flight operations.

It is respectfully submitted that this combination of elements is unique and provides significant advantages for operating a helicopter. Applicant raised this issue on page 10 of his Brief and the Examiner did not respond to the argument. Accordingly, claims 11-13

should be allowed.

Finally, in the Examiner's Answer, the Examiner stated:

...The claims do not claim a "hot start". The claims must be read as broadly as possible. Now the critical matter in this appeal is the temperature of the engine at start up. Start up of an engine can be interpreted broadly. Start up can take one second to as long as one hour if the pilot/designer desires to do so. Thus, the term start up can be interpreted very broadly. The claims call for data storage means and means for inputting. Clearly Moore teaches these. Data storage means are memory storage devices and means for inputting clearly can be keyboards, which is clearly well known. Now, Moore clearly teaches a helicopter engine over-stress warning system in which there are sensors to detect the operating parameters of the helicopter engine. Once the condition is met, the controller sets off signals that the engine is over-stressed. Please note that Moore clearly teaches a "safe engine temperature profile" since if the engine is overstressed, the engine is clearly operating outside of the safe engine temperature profile and hence it sends out a signal of dangerous condition.

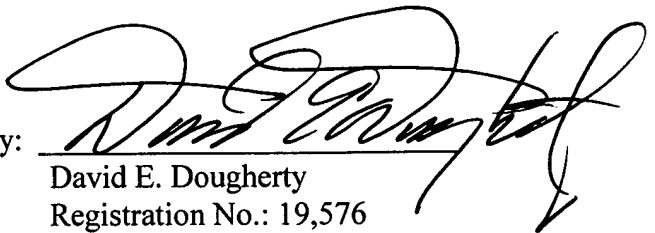
It is respectfully submitted that the Examiner has overlooked Applicant's position that as taught on page 5 of Applicant's specification, inputting a safe temperature profile during start up into the computer allows remedial action to be implemented earlier i.e., as soon as the actual temperature versus a safe temperature profile exceeds a comparable time temperature curve in the profile as opposed to waiting for the temperature to reach a critical value. Applicant's concept is not disclosed or suggested by Moore or any of the other cited references. It is also Applicant's contention that a start up procedure is well-known in the

industry i.e., the time between turning the key and cranking the engine until the engine starts  
it cannot be interpreted as long as one hour if a pilot or designer desires to do so.

Respectfully submitted,

Dated: April 27, 2006

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